Postgraduate Diploma
Invasive and Non-Invasive Mechanical Ventilation for Nursing

tech technological university

Postgraduate Diploma
Invasive and Non-Invasive
Mechanical Ventilation
for Nursing

» Modality: **online**
» Duration: **6 months**
» Certificate: **TECH Technological University**
» Dedication: **16h/week**
» Schedule: **at your own pace**
» Exams: **online**

Website: **www.techtitute.com/in/nursing/postgraduate-diploma/postgraduate-diploma-non-invasive-mechanical-ventilation-nursing**

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01
Introduction

The field of respiratory therapies is currently in high demand due to the high incidence and prevalence of respiratory pathologies, and nursing plays a very important role in the specialized care and monitoring of patients with this type of pathology. Unfortunately, there is little specific specialization in respiratory therapies for nursing professionals, and it is precisely because of this that the motivation was born to create a program designed and focused on those graduates or diploma holders in nursing who wish to specialize in this field.

"This Postgraduate Diploma in Invasive and Non-Invasive Mechanical Ventilation for Nursing contains the most complete and up-to-date scientific program on the market"

The objective of this Postgraduate Diploma in Invasive and Non-Invasive Mechanical Ventilation for Nursing is to update nurses interested in the respiratory therapies that are currently available, so that they can acquire new therapeutic skills and techniques, apply them in their clinical practice, and also contribute to the development of new research.

Patients undergoing respiratory treatment require proper therapeutic compliance, and nursing staff are responsible for empowering these patients and providing them with individualized care; tools that this Postgraduate Diploma provides to achieve excellence in care.

The program includes analysis of clinical cases elaborated by experts in respiratory therapies, explanatory videos for the different therapies, photos of the materials used for the different techniques, as well as the most recent developments and innovations.

As this is a program available entirely online, students can organize their own time and adapt the pace of learning to their own schedule. The contents of this Postgraduate Diploma can be accessed from any computer or mobile device and be consulted at any time, as long as students have an internet connection or have previously downloaded them onto their computer.

This **Postgraduate Diploma in Invasive and Non-Invasive Mechanical Ventilation for Nursing** contains the most complete and up-to-date scientific program on the market. Its most important features include:

- Development of clinical cases presented by experts in related, multidisciplinary areas
- Graphic, schematic, and practical contents created in order to provide scientific and specialized training in those disciplines that are essential for professional care practices
- New developments in Invasive and Non-Invasive Mechanical Ventilation for Nursing
- An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course.
- With special emphasis on evidence-based nursing and research methodologies as applied to Invasive and Non-Invasive Mechanical Ventilation for Nursing
- All of this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments.
- Access to contents from any fixed or portable device with an internet connection

Bring your knowledge up to date with the Postgraduate Diploma in Invasive and Non-Invasive Mechanical Ventilation for Nurses"

This Postgraduate Diploma is the best investment you can make when selecting an up-to-date program, for two reasons: in addition to updating your knowledge in Invasive and Non-Invasive Mechanical Ventilation for Nursing, you will obtain a qualification from TECH Technological University"

This Postgraduate Diploma offers training in simulated environments, which provides an immersive learning experience designed to train for real-life situations.

It includes clinical cases that bring program contents closer to the reality of nursing care.

The program's teaching staff includes professionals from sector who contribute to this training program with their work experience, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersion training programmed to train in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise throughout the program. This will be done with the help of an innovative system of interactive videos made by renowned experts.

02
Objectives

The main objective of the program is to develop theoretical as well as practical learning, so that nurses may master Invasive and Non-Invasive Mechanical Ventilation for Nursing in a practical and rigorous way.

"

This refresher program will generate a sense of confidence when practising nursing, which will help you grow both personally and professionally"

General Objectives

- Update on existing respiratory therapies in which nursing staff is involved
- Promote strategies to provide individualized quality care for respiratory patients and to serve as a basis for achieving excellence in care
- Provide technical skills in respiratory therapies through audiovisual means and the presentation of quality clinical cases
- Encourage professional enhancement through specialized continued education and research

You will achieve your goals thanks to this comprehensive educational program, which provides you with the best tools to obtain the best professional results"
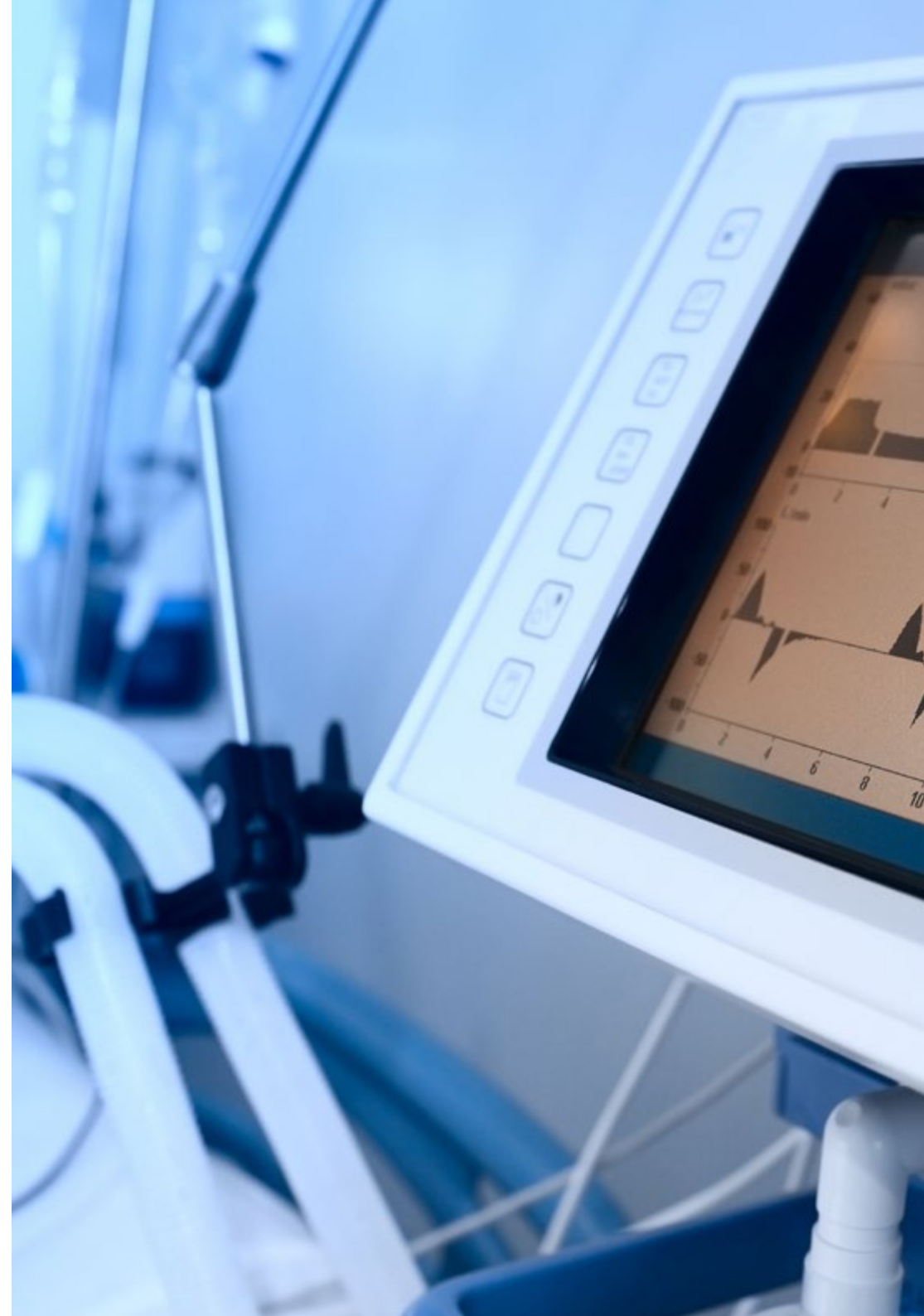
Specific Objectives

Module 1. Anatomo-Physiology of the Respiratory System and Assessment of the Pulmonary Function.
- Update nurses' understanding of respiratory system anatomy of pulmonary ventilation
- Understand how gas diffusion takes place
- Understand how oxygen and carbon dioxide are transported through the blood
- Understand how respiration regulation is carried out

Module 2. Sleep and Wakefulness Disorders
- Understand sleep and breathing physiology to understand possible disturbances
- Be familiar with different diagnostic methods used to detect alterations in sleep patterns
- Gain in-depth knowledge of sleep apnea, different types of apnea and associated health risks
- Be familiar with different treatment alternatives for sleep apnea
- Know existing techniques to perform CPAP titrations and to adjust pressure according to patient needs
- Educate sleep apnea patients to improve environmental factors and sleep hygiene in order to reduce apnea incidence
- Learn to apply a nursing care plan for patients with sleep apnea

Module 3. Non-Invasive Mechanical Ventilation
- Identify physiological ventilation in healthy patients to understand the physiology of noninvasive mechanical ventilation
- Describe the different methods for noninvasive mechanical ventilation.
- Gain an in-depth understanding of the basic concepts necessary to individualize treatments with non-invasive mechanical ventilation according to patient needs
- Describe the different ventilatory modes used to adjust to patient needs
- Update on the different devices used in non-invasive mechanical ventilation
- Recognize the consumables and complementary equipment necessary to provide quality

and individualized treatment
- Identify main implementation problems for non-invasive mechanical ventilation and how to apply best solutions for each case
- Describe procedure for installing mechanical ventilation equipment in a patient's home
- Understand health education advice that can be provided to help ventilated patients in the adaptation process
- Explain how to carry out correct monitoring of ventilated patients

Module 4. Invasive Mechanical Ventilation
- Learn to apply mechanical ventilation combined with aerosol therapy or oxygen therapy
- Describe a nursing care plan for patients on non-invasive mechanical ventilation
- Know the fundamentals of invasive mechanical ventilation, indications, contraindications and possible complications
- Update on invasive mechanical ventilation devices
- Know the different modalities of invasive mechanical ventilation
- Learn the endotracheal intubation technique, and about the care and maintenance it requires
- Describe the different phases in discontinuing mechanical ventilation
- Be familiar with the nursing care plan to be applied in invasive mechanical ventilation

Course Management

This program includes in its teaching staff renowned health professionals who belong to the field of Invasive and Non-Invasive Mechanical Ventilation for Nursing and who contribute to this specialization with their work experience, together with recognized specialists in the field that are members of reputed national and international scientific societies and who have participated in the design and development of the contents.

"*Learn about the latest advances in Invasive and Non-Invasive Mechanical Ventilation for Nursing from leading professionals*"

Guest Director

Dr. Amado Canillas, Javier

- Nursing Supervisor at 12 de Octubre H. Hospitalization of Pneumology Endocrinology and Rheumatology
- Associate Professor of Health Sciences at the Complutense University of Madrid: Associate Clinician of Medical-Surgical Nursing
- Evaluator of teaching activities for the Technical Secretariat of the Directorate General of Planning, Research and Training of the Community of Madrid
- PhD"Outstanding Cum Laude, Complutense University of Madrid, 2014
- Degree in Nursing and Master's Degree in Research in Care from the Complutense University of Madrid
- Bachelor's Degree in Computer Science IT, Complutense University
- Currently studying a PhD in Audiovisual Communication at Complutense U.
- More than 10,000 accredited teaching hours as a professor of specialized care for different organizations, in particular the Nursing College of Madrid and FUDEN

Co-Direction

Ms. Santamarina López, Ana

- Nurse with extensive experience in home respiratory therapy
- Graduate in Nurses Medicine from the University of Leon, Spain
- Postgraduate Diploma in Digital Teaching in Nursing, CEU Cardenal Herrera University
- Master's Degree in Research in Dental Sciences, (University of León)

Professors

Ms. Castaño Menéndez, Alba
- UCRI (Intermediate Respiratory Care Unit) at 12 Octubre University Hospital
- Bachelor's Degree in Nursing, Complutense Univeristy, Madrid
- Postgraduate Diploma in Respiratory Patient Care of FUDEN Graduate School of Postgraduate Studies
- Nurse in home respiratory therapies, MMNI, MMI Completing TRD at the 12 de Octubre University Hospital
- Emergency Department and Internal Medicine at San Carlos Clinical University Hospital

Ms. Almeida Calderero, Cristina
- Pneumology, Endocrine and Rheumatology Service, 12 de Octubre University Hospital, Madrid
- University Diploma in Nursing University of Salamanca
- University Diploma in Occupational Therapy University of Salamanca
- Collaborator of the Faculty of Nursing, Physiotherapy and Podiatry at the Complutense University of Madrid
- Pediatric Surgical Unit Gregorio Marañón Maternity Hospital, Madrid
- Intensive Care Unit. Clinical University Hospital Salamanca
- Surgical Resuscitation Unit Clinical University Hospital Salamanca
- Nurse in Primary Care in Health Center in Salamanca

Ms. De Prado de Cima, Silvia
- Graduate in Physiotherapy from the University of Valladolid, Spain
- Master's Degree in Thoracic Physiotherapy by Gimbernat and Tomás Cerdà University (Campus Sant Cugat)
- Physiotherapist in home respiratory therapies

Ms. García Vañes, Cristina
- Graduate in Nurses Medicine from the University of Cantabria, Spain
- Nurse in home respiratory therapies

Ms. Rojo Rojo, Angélica
- Graduate in Nurses Medicine from the University of Valladolid, Spain
- Postgraduate Diploma in Nursing in the Integral Care of Respiratory Patients
- Nurse in home respiratory therapies

Mr. Amado Durán, Alfredo
- Diploma in Physiotherapy from Europea University
- Móstoles Hospital, Madrid Clinical training: cervical spine treatment
- Traditional Thai Massage Training at Wat Po School of Traditional Medicine Bangkok, Thailand
- Degree in Nursing from Europea University
- Master's Degree in Osteopathy, Belgian College of Osteopathy, FBO First, Structural
- Consultations in Chembenyoumba, Mayotte
- Consultations en Sainte Suzanne Reunión Island
- Consultations at the Frejus-Saint-Raphael Hospital Frejus, France

Ms. García Pérez, Silvia
- Pneumology, Endocrine and Rheumatology Service, 12 de Octubre University Hospital, Madrid
- Senior Technician in Dietetics and Nutrition I.E.S San Roque Madrid
- Certificate in Nursing from the Complutense University, Madrid
- Nuclear Medicine Service at the 12 de Octubre University Hospital, Madrid
- Neurosurgery Department, 12 de Octubre University Hospital, Madrid.
- UCI and Pediatrics Service, 12 de Octubre University Hospital, Madrid
- Member of teaching staff at the Faculty of Nursing, Physiotherapy and Podiatry, Complutense University, Madrid, for clinical practice sessions of the Nursing degree

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Structure and Content

The syllabus has been designed by a team of professionals from the best hospitals and universities in the country, who are aware of the relevance of up-to-date training in the field, and are committed to quality teaching through new educational technologies.

Module 1. Anatomo-Physiology of the Respiratory System and Assessment of the Pulmonary Function.

1.1.   Respiratory Apparatus Anatomy
    1.1.1.   Upper Airway Anatomy
    1.1.2.   Lower Airway Anatomy
    1.1.3.   Lungs and Respiratory Unit
    1.1.4.   Accessory Structures: Pleura and Respiratory Musculature
    1.1.5.   Mediastinum
    1.1.6.   Pulmonary Perfusion
1.2.   Pulmonary Ventilation
    1.2.1.   Respiratory Mechanism
    1.2.2.   Airway Resistance
    1.2.3.   Breathing Work
    1.2.4.   Lung Volume and Capacity
1.3.   Gas Diffusion
    1.3.1.   Partial Pressure
    1.3.2.   Diffusion Rate
    1.3.3.   Relationship between Ventilation and Perfusion
1.4.   Gas Transportation
    1.4.1.   Blood Oxygen Transport
    1.4.2.   Hemoglobin Dissociation Curve
    1.4.3.   Blood Coal Transport
1.5.   Breathing Regulation
    1.5.1.   Respiratory Control Centers
    1.5.2.   Chemical Breathing Control
    1.5.3.   Non-Chemical Breathing Control
1.6.   Breathing Characteristics
    1.6.1.   Frequency (F)
    1.6.2.   Rhythm
    1.6.3.   Depth
    1.6.4.   Adventitious Rumbling
    1.6.5.   Breathing Patterns

1.7.   Functional Respiratory Examination Pulmonary Function Tests
    1.7.1.   Spirometry Interpretation of Results
    1.7.2.   Bronchial Provocation Tests
    1.7.3.   Static Pulmonary Volumes Body Plethysmography
    1.7.4.   Pulmonary Resistance Study
    1.7.5.   Pulmonary Elasticity and Distensibility *Compliance*
    1.7.6.   Study of Respiratory Muscle Function
    1.7.7.   Pulmonary Diffusion Tests DLCO
    1.7.8.   Gas Exchange: Arterial Gasometry Acid-base Equilibrium
    1.7.9.   Stress Tests. 6-minute Walk and Shuttle Test
    1.7.10. Pulse Oximetry
    1.7.11. Bronchoscopy
    1.7.12. X-ray Tests
1.8.   Assessment of Respiratory Patients
    1.8.1.   Quality of Life for Respiratory Patients: Saint George Questionnaire
    1.8.2.   Nursing Assessment of the Respiratory Patient by Functional Patterns

Module 2. Sleep and Wakefulness Disorders

2.1.   Sleep and Breathing Physiology
    2.1.1.   Snoring
    2.1.2.   The Respiratory Tract During Sleep
    2.1.3.   Sleep Phases
    2.1.4.   Hormones
2.2.   Sleep Disorders Diagnosis
    2.2.1.   Symptomatology
    2.2.2.   Daytime Hypersomnolence Test
    2.2.3.   Hospital and Home Polygraphs
    2.2.4.   Differences between Polygraph and Polysomnography

Module 3. Non-Invasive Mechanical Ventilation

Module 4. Invasive Mechanical Ventilation

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A unique, key, and decisive training experience that will boost your professional development"

05
Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH Nursing School we use the Case Method

In a given situation, what should a professional do? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Nurses learn better, faster, and more sustainably over time.

With TECH, nurses can experience a learning methodology that is shaking the foundations of traditional universities around the world.

According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, in an attempt to recreate the real conditions in professional nursing practice.

> *Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"*

The effectiveness of the method is justified by four fundamental achievements:

1. Nurses who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.

2. The learning process has a clear focus on practical skills that allow the nursing professional to better integrate knowledge acquisition into the hospital setting or primary care.

3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.

4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine case studies with a 100% online learning system based on repetition combining a minimum of 8 different elements in each lesson, which is a real revolution compared to the simple study and analysis of cases.

The nurse will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology we have trained more than 175,000 nurses with unprecedented success in all specialities regardless of practical workload. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.

This program offers the best educational material, prepared with professionals in mind:

Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is really specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Nursing Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch them as many times as you want.

Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.

20%

15%

15%

3%

20%

17%

3%

7%

Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.

Certificate

The Postgraduate Diploma in Invasive and Non Invasive Mechanical Ventilation for Nursing guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"

This **Postgraduate Diploma in Invasive and Non-Invasive Mechanical Ventilation for Nursing** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Invasive and Non-Invasive Mechanical Ventilation for Nursing**

Official Nº of Hours: **500 hours.**

tech technological university

Awards the following
CERTIFICATE
to
Mr./Ms. _____, with identification number _____.
For having passed and accredited the following program

POSTGRADUATE DIPLOMA
in
Invasive and Non-Invasive Mechanical Ventilation for Nursing

This is a qualification awarded by this University, equivalent to 500 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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